AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-15. (Cancelled)

16. (New) A tuner adapted to equalize non-linear frequency changes within a desired frequency range in response to tuner displacements relative to a resonator body, said tuner comprising:

a tuner element a non-uniform distribution of the effective dielectric permittivity along an axis of tuner displacement, said non-uniform distribution of the effective dielectric permittivity is realised by subdividing the tuner element into a number of sections, each of which is distinguishable by their geometrical shape.

17. (New) The tuner according to claim 16, wherein said tuner element is subdivided into sections that can be distinguished by the value and distribution of the dielectric coefficient εr.

18. (New) The tuner according to claim 16, wherein the effective tuning area is within a hollowness of the resonator.

19. (New) The tuner according to claim 16, wherein the effective tuning area is outside of the resonator.

20. (New) The tuner according to claim 18, wherein the tuner includes two cylindrical sections comprising a ratio d_1/d_2 of section diameters within a range from 1.1 to 1.6 and a corresponding ratio l_1/l_2 of section lengths within a range from 0.2 to 0.4.

21. (New) The tuner according to claim 18, wherein the tuner includes two sections having a constant diameter having a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the

dielectric coefficients of the sections within a range from 2.5 to 3.5 and a corresponding ratio l_1/l_2 for the section lengths within a range from 0.2 to 0.4.

22. (New) The tuner according to claim 19, wherein the tuner includes two sections comprising a ratio d_1/d_2 for the section diameters within a range from 1.1 to 2 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.2 to 2.8.

23. (New) The tuner according to claim 19, wherein the tuner includes two sections having a constant diameter comprising a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the dielectric coefficients of the sections within a range from 1.2 to 4 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.2 to 2.8.

24. (New) The tuner according to claim 16, wherein the tuner is equipped with a hollowness for fastening of an axis.

25. (New) The tuner according to claim 24, wherein the axis of tuner displacement is arranged centrally through the resonator hollowness.

26. (New) A tuner adapted to equalize non-linear frequency changes within a desired frequency range in response to tuner displacements relative to a resonator body, wherein the resonator comprises a non-uniform distribution of the effective dielectric permittivity along the axis of tuner displacement.

27. (New) The tuner according to claim 26, wherein the non-uniform distribution of the effective dielectric permittivity is realised by subdividing the resonator into a number of sections, each of which is distinguishable at least by their geometrical shape and the value and distribution of the dielectric coefficient ε_r.

28. (New) The tuner according to claim 26, wherein the resonator consists of two sections having a constant dielectric coefficient comprising a ratio d_1/d_2

of the diameters of the hollowness in each section within a range from 1.1 to 2.0 and a corresponding ratio l_1/l_2 of the section lengths within a range from 1.5 to 4.5.

29. (New) The tuner according to claim 26, wherein the resonator consists of two sections having a constant diameter, a ratio $\varepsilon_{r1}/\varepsilon_{r2}$ for the values of the dielectric coefficients of the sections within a range from 1.4 to 4 and a corresponding ratio l_1/l_2 for the section lengths within a range from 1.5 to 4.5.

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